

*aurenticum* have been found to be endemic to Manipur. As the above orchids grow in a very small geographic area, it is logical that they also may be listed among the threatened plants of India.

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### 37. *WOODSIA LANOSA* HOOK. (WOODSIACEAE) FROM GARHWAL HIMALAYA: REDISCOVERED

While investigating the pteridophytic flora of Roopkund area of Garhwal Himalaya, one of us (KB) collected a rare and threatened fern (*Woodsia lanosa* Hook.). A perusal of earlier literature shows this fern was not collected from Garhwal Himalaya after the original collection and subsequent workers included this on the authority of previous reports (Hope 1903, Duthie 1906, Dhir 1980, Singh *et al.* 1986, Khullar *et al.* 1987 and Pande 1990). It is now being reported from Garhwal Himalaya after its first report by Duthie in 1884.

*Woodsia lanosa* Hook., Syn. Fi 1., 47. 1866; Clarke, Trans. Linn. Soc. Lond., II, Bot. 1: 435. 1880; Beddome, Handb. Ferns Brit. India, 22. 1883; Duthie, Cat. Pl. Kumaun, 230. 1906; Dhir, Bibliotheca pteridologica, 1: 62. 1980; Singh, Chaudhery & Rao, Ind. J. For., 9: 163. 1986; Khullar, Sharma & Chaudhary, West Himal., 1: 374. 1987; Pande, Indian Fern J., 7: 174. 1990.

*Gymnogramme andersoni* Bedd., Ferns Brit. India 190, 1866; Hope, J. Bombay nat. Hist. Soc., 100. 1903 (pro parte).

Voucher specimens are housed in the herbarium, Department of Botany, Kumaun University Campus,

Almora. Chamoli Garhwal: Roopkund near Bedini Bugyal, 3300 m dated Sept., 1991, *Kusum Bhandari* 15.

Duthie (1884) cf. Hope (1903), Duthie (1906), Dhir (1980), Singh *et al.* (1986: Sheet in CAL 3706), Khullar *et al.* (1987: Sheet in DD) reported this rare fern from Fulmar pass in Tehri Garhwal and Kauri pass in Chamoli district. Not collected since then. Further, there is no collection of this species from Garhwal in BSD (cf. Singh *et al.* 1986).

Extremely rare fern that grows in rock crevices between altitude of 3000 and 3600 m. This taxon reported herein is not likely to survive unless proper steps are taken for its conservation.

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### 38. *ERAGROSTIS ASPERA* (JACQ.) NEES : AN ADDITION TO THE GRASSES OF ORISSA

(With a text-figure)

During the study of the grasses collected from three districts of Orissa, I came across a taxon, *Eragrostis aspera* (Jacq.) Nees, which has not been

earlier reported from the state (Mooney 1950, Jain *et al.* 1975). Earlier this grass has been reported from Madras and Southern Konkan, Marathwada, Rajasthan

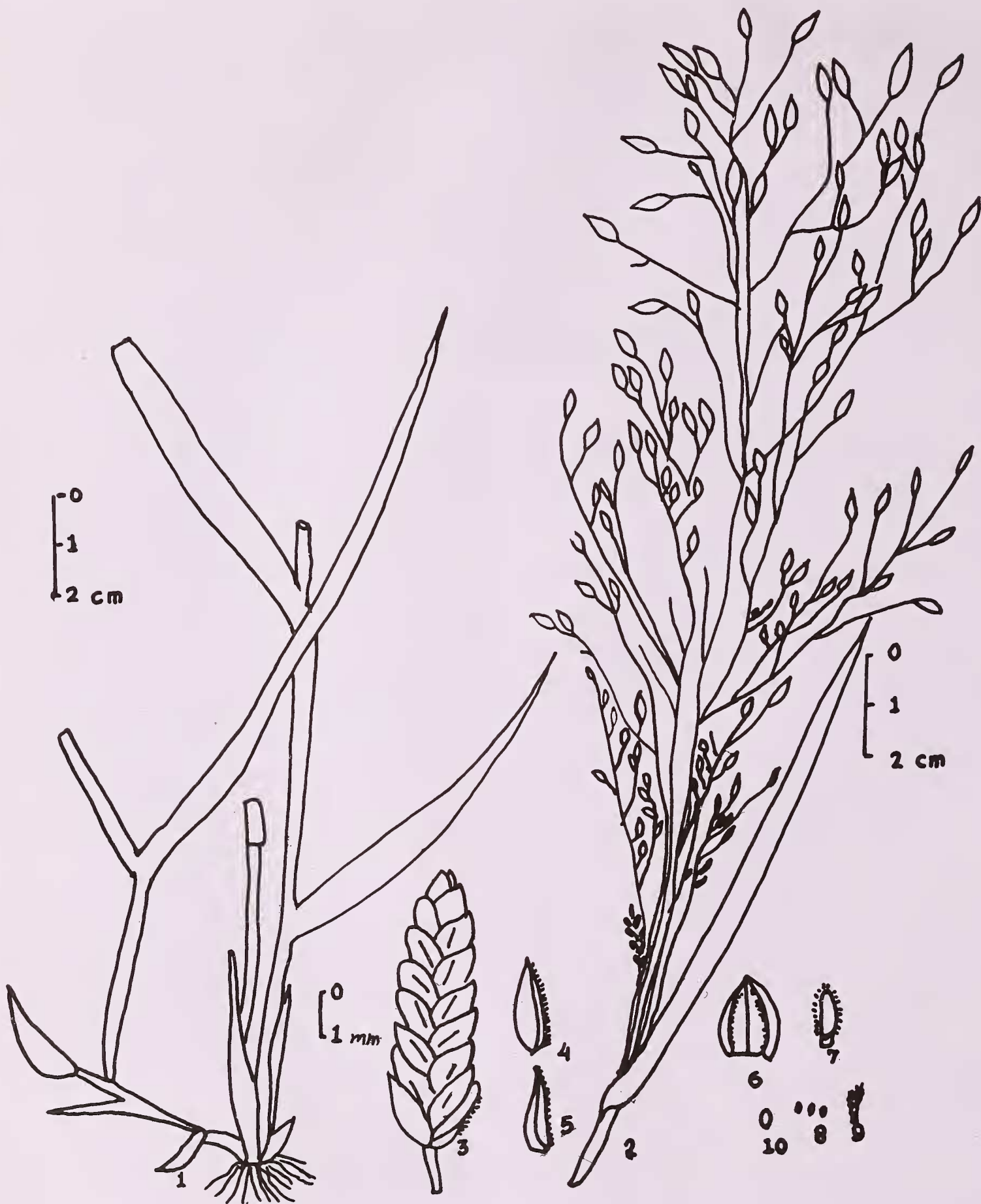


Fig. 1. *Eragrostis aspera* (Jacq.) Nees

1. Habit; 2. Inflorescence; 3. Spikelets; 4. Lower glume; 5. Upper glume; 6 & 7. Lemma and its palea; 8. Stamens; 9. Ovary; 10. Caryopsis.

and Bihar. It grows in cultivated fields on high hills (910-1220 m) of Kalahandi, Gajpati and Ganjam districts of Orissa. The detailed description of the taxon is available in the literature, hence the present notes only deal with its correct nomenclature, distribution and ecology. An illustration is also provided. The voucher specimens are deposited in the herbarium, Bhagalpur University. The identification of the specimens have been confirmed at the Central National Herbarium (CAL).

**Eragrostis aspera** (Jacq.) Nees, Fl. Afr. Austr. 468. 1841; Hooker, Fl. Brit. Ind. 7: 314. 1896; Bor, Gr. Burma, Ceylon, Ind. & Pak. 501. 1960.

The plant frequently grows in gravelly soils in shifting cultivation fields (Bogoda or Poda, Oriya) on

hills.

**Distribution:** INDIA: Bihar, Rajasthan, Western India and South India; Africa, Mascarene Islands.

**Flowers:** August-December.

**Specimens examined:** Nijamaska (1065 m), Thaumal Rampur block, Kalahandi district, Jha 5TR; Gangabad, Koinpur, Gajpati district, 975 m, Jha 21K; Marmalia, Thumba, Ganjam district, 975 m, Jha 8T; Kathpatani, Rudhapadar, Ganjam district, Jha 12R.

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### 39. STUDIES ON THE SPORE MORPHOLOGY OF *OLEANDRA UNDULATA* (WILLD.) CHING AND *O. WALLICHII* (HOOK.) PRESL.

(With a plate)

#### INTRODUCTION

Recently, some of the important contributions on the spore morphology of ferns and fern-allies were made by Erdtman and Sorsa (1971); Wilce (1972), Wagner (1974), Mitui (1977), Lugardon (1978), Tryon and Tryon (1982) and others. In India some of the contributions were provided by Nayar (1964), Joshi (1966-67), Devi (1973, 1977, 1981), Verma and Khullar (1978), Bir and Bhusri (1985), etc.

However, the family Oleandraceae received little attention in the context of spore morphological studies (Braggio 1966, Devi and Nayar 1971, Liew 1977, Harmata and Kornas 1978). This communication aims to present comparative spore structures of *O. undulata* and *O. wallichii*.

#### MATERIAL AND METHODS

The spore samples were collected from herbarium specimens and were treated by the

acetolysis technique (Erdtman 1952). The terminology, namely exine processes, ornamentation, stratification and laesural features were followed after Erdtman *et al.* (1961).

The descriptions are based on light microscopic observations and in case of *O. undulata*, spores were also examined under Scanning Electron Microscope. The magnification of the photographs has been indicated in the figures.

#### OBSERVATIONS

***Oleandra undulata*** (Willd.) Ching, Lingnan Sci. J. 12: 565. 1933. *O. cumingii* J. Smith, Hook. Sp. Fil. IV. 158.

The specimens were collected from a dense *Quercus* forest, at an elevation of 2100 m.a.s.l., growing as lithophytes on exposed, rocky walls or as epiphytes on *Quercus* tree trunks. The plant is rare in its occurrence in Garhwal Himalaya (GUH- 12103).